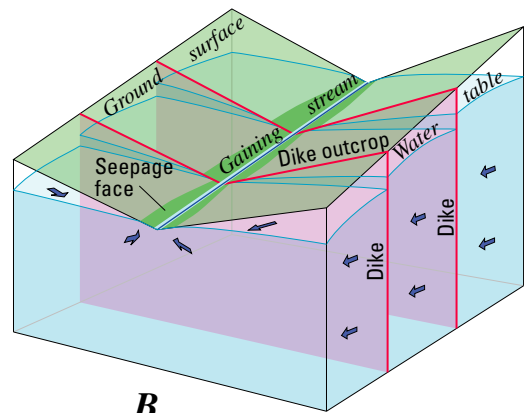
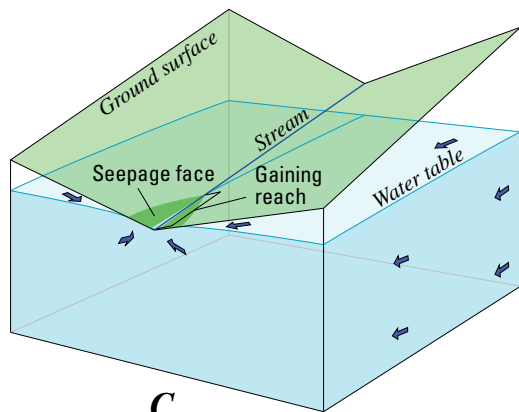


A

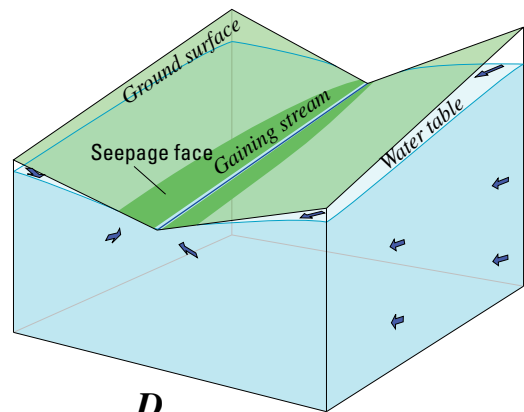


B

ARROWS INDICATE GENERAL DIRECTION OF GROUND-WATER MOVEMENT



C



D

Streams are classified as ephemeral, perennial, or intermittent depending on the timing and source of streamflow. Ephemeral streams flow only in direct response to rainfall, and their stream channels are above the water table (A). Perennial streams flow continuously throughout the year, whereas intermittent streams are dry during some periods but receive ground-water discharge or water from surface sources during other periods. Some streams flow perennially throughout their entire course, others flow perennially over parts of their course, and the remaining streams flow for only part of the year throughout their entire course. Streams in Hawaii commonly flow perennially in the mountainous interior areas where the stream gains water from a dike-impounded ground-water system, and where rainfall is persistent (B), or at low altitudes near the coast where the stream gains water from a freshwater-lens system (C). Where a vertically extensive freshwater-lens system exists (Izuka and Gingerich, 1998), streams may gain water and flow perennially at higher altitudes inland from the coast (D). In areas where surface water is diverted by humans, streams that are otherwise perennial may flow downstream from the diversions only during storms. An intermittent stream may exist where a perched ground-water body discharges part of the time to the stream.